

the facing panel. Furthermore, the one or more ribs **450** may include a sloping portion **454** located at either the top and/or bottom ends of the ribs to facilitate the application of the vinyl siding panels with a wall or other surface. The sloping portion **454** may be of a substantially continuous slope or of a changing slope that approximates a curve. Nevertheless, it should be recognized that rib(s) **450** may have any suitable dimensions, spacing, shape, and pattern for facilitating ventilation (i.e., providing an air gap) between backing portion **410** and an underlying structure. For example, unless otherwise specified, a rib may have any size and cross-sectional shape along the length thereof, such as but not limited to, straight, diamond, circle, sphere, square, cube, rectangle, oval, ellipse, triangle, cone, cylinder, parallelogram, curve, and any other polygon. Any number of ribs may be used, and each rib may have the same or different shape. Unless otherwise specified, ribs may be spaced at any distance and in any pattern.

An exemplary backing portion may also include a hydrophobic material. For example, a hydrophobic material may be molded into a backing portion and/or sprayed onto a backing portion. Any other suitable method (e.g. extrusion) may also be used for including a hydrophobic material in a backing portion. A hydrophobic material may be any hydrophobic material such as but not limited to, a paraffin wax, polyethylene, fluoropolymer, or any other low surface tension material. As a result, a hydrophobic material may lower the surface tension of a backing portion. Lower surface tension may cause water to bead up and drain down a backing portion faster than if the backing material did not have the hydrophobic material.

FIGS. **21** and **22** depict the application of an exemplary siding panel with a wall or other surface **500** as it would when installed in the standard application. As seen, the ribs **450** engage a portion of the **500** to create a gap **502** therebetween to facilitate the movement and/or removal of air, moisture and/or other fluids. The gap **502** is formed due to the primary rear surface **452** (and optionally drainage grooves **430**) being set back from the rib **450**. The gaps developed by the standoffs in the backing portion could vary based on the size and orientation of the rib and drainage groove geometry.

Other variations of the exemplary embodiments of the present invention are also possible. Optionally, an exemplary embodiment of the present invention may provide for an orientation of the grooves or channels on the surface of a backing portion such that grooves or channels of adjacent, substantially similar paneling units may be aligned when installed to form a continuous drainage groove or channels between adjacent units. In this manner, liquid may drain from the surfaces of the backing portions of the installed paneling units through an interconnected system of substantially continuous drainage grooves or channels. Additionally, an exemplary embodiment of the present invention may optionally provide for at least one connector groove or channel on a surface of a backing portion of a paneling unit to form at least a segment of a substantially continuous connector groove or channel with an adjacent, substantially similar paneling unit when installed. As discussed above, the optional substantially continuous grooves or channels between adjacent panels may further facilitate the drainage of liquid from the surfaces of the backing portions of installed paneling units.

One exemplary embodiment of the present invention may provide a siding unit, which is comprised of a backing panel and a facing panel. Other types of paneling units comprising a facing panel and a backing panel (e.g., a wall panel unit) are considered to be within the scope of the present invention. Some advantages of a backed panel of the present invention may include improved energy efficiency, reduced air infiltra-

tion, reduced curvature in the facing panels, increased ease of installation, improved drainage, improved ventilation, and/or decreased material or installation costs. An exemplary embodiment of a backed paneling unit of the present invention may optionally include improved interlocking pieces and an improved backing. Chemicals may optionally be added to the backing portion that aid in the reduction or repelling of insects such as carpenter ants and termites.

The top or face portion of the paneling units may be smooth or may have any number of finishes that are known by those in the art of manufacturing paneling. The finish may add contour and texture to simulate the appearance of wooden paneling.

The paneling units of the present invention may be of various lengths, heights, and thicknesses. The particular dimensions of a panel of the present invention may be selected to suit a particular application. Some exemplary embodiments of a paneling unit of the present invention may be approximately 15 to 18 inches in height. However, as just mentioned, it should also be recognized that a paneling unit of the present invention may have any desired dimensions including a height up to or in excess of 50 inches.

The exterior paneling units as described herein may be formed from a polymer such as a vinyl material. Other materials such as polypropylene, polyethylene, other plastics and polymers, polymer composites (such as polymer reinforced with fibers or other particles of glass, graphite, wood, flax, other cellulosic materials, or other inorganic or organic materials), metals (such as aluminum or polymer coated metal), or other similar or suitable materials may also be used. The paneling may be molded, extruded, roll-formed from a flat sheet, vacuum formed, or formed by any other suitable manufacturing technique.

Any embodiment of the present invention may include any of the optional or preferred features of the other embodiments of the present invention. The exemplary embodiments herein disclosed are not intended to be exhaustive or to unnecessarily limit the scope of the invention. The exemplary embodiments were chosen and described in order to explain the principles of the present invention so that others skilled in the art may practice the invention. Having shown and described exemplary embodiments of the present invention, those skilled in the art will realize that many variations and modifications may be made to affect the described invention. Many of those variations and modifications will provide the same result and fall within the spirit of the claimed invention. It is the intention, therefore, to limit the invention only as indicated by the scope of the claims.

What is claimed is:

1. A paneling unit adapted to be installed on an underlying structure, said paneling unit comprising:
  - a facing portion; and
  - a backing portion secured to said facing portion, said backing portion comprising a primary rear surface that is substantially planar, at least one rib relative to said primary rear surface and having an upper surface that is substantially parallel to said primary rear surface such that the depth of the rib is approximately 25% to 300% of the thickness of the backing portion from said primary rear surface to the closest point of the facing portion, and at least one drainage groove relative to said primary rear surface and adjacent to said at least one rib;
- wherein said at least one rib is adapted to facilitate ventilation between said backing portion and said underlying structure.